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U.S. Fish and Wildlife Service
GULF OF MAINE COASTAL PROGRAM
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December 19, 2012

R. Clayton Cleaves, Tribal Chief
Passamaquoddy Tribe - Pleasant Point Reservation
P.O. Box 343, Route 190
Perry, Maine 04667

Joseph Socobasin, Tribal Chief
Passamaquoddy Tribe - Indian Township Reservation
P.O. Box 301
Princeton, Maine 04668

Dear Chief Cleaves and Chief Socobasin:

You will recall that you invited the U.S. Fish and Wildlife Service (USFWS) to meet with you, other elected officials, and tribal members, government to government, to discuss the Passamaquoddy desire to restore river herring to the St. Croix watershed - the ancestral home of the Passamaquoddy. That meeting was held in Perry, Maine, on August 28, 2012. During the meeting, several requests were made for information on the role of river herring, specifically alewife, and the role of the USFWS with regard to the St. Croix River in Maine. This letter provides the information requested at the meeting.

River Herring are Native to the St. Croix Watershed

River herring (alewife and blueback herring) are a native and indigenous species historically found throughout the St. Croix River watershed, a million acre drainage area. Prior to 1825, St. Croix alewives were commercially harvested in excess of 700,000 adults per year. Evidence found at the Mud Lake Stream archaeological site, located upstream of Spednic Lake near Forest City, Maine, confirmed that the fish migrated at least 65 miles upstream of the head of tide, prior to European contact and as long as 4000 years ago. As part of their annual spawning migration, the fish ascended the St. Croix River past both Salmon Falls and Grand Falls. Large runs of alewife were sustained by the extensive spawning and rearing habitats above Grand Falls. As outlined in a report prepared for the State of Maine by the former Deputy Commissioner of the Maine Department of Marine Resources, this habitat area produced the abundant run size and harvest rates that occurred historically in the St. Croix (Flagg 2007).

Alewives are Ecologically Important

River herring are a keystone species. They are integral to the ecological functions of the freshwater, estuarine, and marine environments. Alewives are a food source for many in the aquatic food web, and they play an important role in maintaining ecosystem health. In the freshwater environments of rivers and

lakes, they provide forage for the bass, trout, salmon, osprey, eagle, kingfisher, blue heron, and aquatic furbearing mammals. Their marine-derived nutrients are deposited in freshwater environments during their return migrations (Durbin 1979), which aids the growth and maintenance of other species and the bacterial breakdown of leaf litter.

In the marine environment, river herring are eaten by a wide variety of commercially and recreationally important fish, such as bluefish, weakfish, striped bass, cod, pollock, and silver hake. Bald eagles, sea birds and many other migratory bird species gain sustenance from eating river herring. A number of federally listed species, including endangered whales, sea turtles, roseate terns, and Atlantic salmon also feed on river herring. Post-spawned adult river herring used to migrate back to the sea in large enough numbers to provide cover from predators for Atlantic salmon smolts and juvenile shad and smelt in rivers, estuaries, and the marine environment.

Alewives also serve as an important host species to a native freshwater mussel species. Alewife carry very young mussels up and down rivers in their gills. Movement of the alewife floater (*Anodonta imbecilis*) is accomplished in part by the alewife fish. This mussel is a coastal plains species that is distributed from Nova Scotia to eastern Quebec and south to Virginia. It is found in coastal streams and lakes and occurs in silt, sand, and gravel substrates (Clarke 1981).

Freshwater mussels filter large amounts of algae, zooplankton, bacteria and sediments from the water. They function to maintain water quality. Mussels store nutrients and minerals in their tissues and shells, such as carbon, nitrogen, potassium and calcium. They are sensitive to pollution and their condition is useful for assessing the health of aquatic ecosystems. Mussels are an important food source for fish and mammals. Alewife play an important role in the survival of this freshwater mussel species that cannot be accomplished when alewife do not have access to freshwater habitats (Nedea 2003).

Effect of Fishway Closure on Alewife numbers

The ecological connection between the size of the alewife population and alewife access to spawning and rearing habitat was made clear in recent times as a result of fishway closures. As described in a report to the State of Maine Atlantic Salmon Commission:

- a) 1988 - closure of the Spednic Lake fishway caused a tenfold reduction in the alewife run;
- b) 1990 - closure of the Grand Falls fishway caused a fivefold reduction of the remaining run;
- c) 1995 - closure of the Woodland fishway reduced the run by an additional tenfold; and,
- d) the run continued to decline because there is little suitable spawning and rearing habitat for alewife downstream of Woodland (Flagg 2007).

USFWS on the St. Croix: Past and Present

The USFWS is a Federal trustee for migratory birds, endangered species, and diadromous and interjurisdictional fish. Our mission is to work with others to conserve, protect and enhance fish and wildlife, and plants and their habitats for the continuing benefit of the American people.

The USFWS is committed to working on a government-to-government basis with the Maine Tribes in fulfillment of its trust responsibilities for federally recognized tribes. Government-to-

government consultation is embodied in Executive Order 13175 (*Consultation and Coordination with Indian Tribal Governments*), the *Department of the Interior Policy on Consultation with Indian Tribes*, and the USFWS's *Native American Policy*. During our meeting last August, you and other tribal members made it clear that alewife continue to be spiritually important, are a source of cultural sustenance, and that restoration of abundant alewife runs in the St. Croix River watershed is a high priority for the Passamaquoddy. We understand that this was affirmed in the fall by a vote of the Joint Tribal Council of the Passamaquoddy Tribes, which is the governing body for the Passamaquoddy in the United States. The USFWS remains ready and willing to continue consulting and coordinating with the Passamaquoddy to advance the restoration of river herring, especially alewife, within its historic range in the St. Croix River watershed.

Since 1963, the USFWS has engaged with partners to restore native fish species to their historic habitat in the St. Croix River. For that purpose, we provided Federal funds to the State of Maine to construct fishways at the Woodland and Grand Falls Dams for upstream passage of Atlantic salmon, alewives, and American shad. In 1993, the USFWS began collaborating with others on a wide range of diadromous and freshwater fisheries projects. We did that as part of the ad hoc St. Croix River Fisheries Steering Committee consisting of fishery biologists from the State of Maine, USFWS, National Marine Fisheries Service, and Canada. Since the fishway closures, the USFWS has funded annual monitoring of the fish runs through the fishway at the Milltown Dam, which as you know is the first dam on the river located at the head of tide. We also funded the construction of a new monitoring trap at the Milltown fishway, and numerous alewife research initiatives, including Bentzen and Paterson 2006; Cronin-Fine et al. in press; Labbe et al. 2011; Willis 2006. These studies were designed to inform decision making about alewife restoration in the St. Croix River watershed

The Proposal for Public Discussion

In July 2009, the St. Croix River Watershed Board of the International Joint Commission (IJC) made a request to the ad hoc St. Croix Fisheries Steering Committee to assist them in resolving the dispute over alewife passage in the river by developing an adaptive management plan for alewife re-introduction (restoration) to the St. Croix River watershed. The parameters outlined by the IJC included the development of measurable objectives for alewives, smallmouth bass, and monitoring. What resulted from the committee's effort at compromise was a proposal containing fisheries management actions that so severely limit and restrict alewife restoration that it fails to meet the original intent of the IJC's request. Given its deficiencies, it will neither help to resolve the dispute nor lead to a timely restoration of alewives to the watershed.

Per the IJC, the draft proposal was intended to be vetted by the IJC's St. Croix River Watershed Board through a public review process, stakeholder input, and binational information exchange for input and feedback before the proposal was finalized. The Watershed Board received approximately 100 written and oral submissions. The large majority of them did not support the plan. This lack of support was expressed in formal letters from the USFWS, the National Marine Fisheries Service, and the Atlantic States Marine Fisheries Commission. Fisheries & Oceans Canada filed a letter of limited interest, but no support for implementation.

The USFWS's position regarding the "Proposal for Public Discussion: an adaptive plan for managing alewife in the St. Croix River Maine and New Brunswick" is outlined in a letter dated July 19, 2010, from USFWS Northeast Regional Director Marvin Moriarty to Colonel Philip T. Feir, of the U.S. Army Corps of Engineers who was serving as the U.S. Co-Chair of the IJC's International St. Croix River Watershed Board. In the letter, USFWS objected to the proposal. The shortcomings include: a) restricting alewife restoration to a portion of the watershed, b) monitoring of the smallmouth bass population is primarily

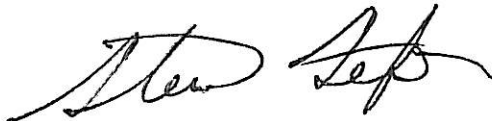
linked to alewife abundance with no consideration of natural and anthropogenic factors that limit bass populations, and c) the number of adult alewives allowed into the watershed is dependent upon the recruitment success of smallmouth bass, which is a non-native, exotic fish species. USFWS disagrees with this approach. Several studies have demonstrated that sea-run alewife have no negative impacts on overall water quality, zooplankton communities, or recreational fisheries. To the contrary, alewives provide abundant forage for freshwater bass species in approximately 70 of Maine's watersheds including the Kennebec, Sebasticook, Damariscotta, Penobscot, and Orland Rivers (Kircheis 2004; Willis 2006, GPLA 2012). Additionally, a recent study at Spednic Lake demonstrated that a variety of other environmental factors, specifically lake level, temperature, and habitat availability, directly influence and control smallmouth bass survival (Dudley et.al. 2011).

Smallmouth bass have been shown to live harmoniously with sea-run alewives in hundreds of Maine rivers and lakes. In the St. Croix watershed, smallmouth bass were introduced long before society was aware of the long-term ecological disasters that can be caused by introducing exotic fish species. In other regions of Maine, the negative effects of smallmouth bass on brook trout, lake trout (togue) and endangered Atlantic salmon are undisputed and biologists work to eradicate smallmouth bass.

In conclusion, the USFWS shares and supports your goal of restoring river herring to their historic range in the St. Croix watershed. To advance that purpose, USFWS recommends that the fishways on the St. Croix River be opened to allow sea-run alewives free access to their historic habitat in the watershed. We also recommend that: a) monitoring and habitat assessments are conducted to identify alewife restoration needs, and b) fish passage at dams and crossings be evaluated to identify needed improvements.

We hope this has provided the information you wanted and answered the questions that were raised at the meeting. If you have any questions about this letter, please do not hesitate to contact me directly, or Ms. Sandra Lary. Her phone number is 207-781-8364. Her electronic mail address is: Sandra_Lary@fws.gov. We share your vision of restoring alewives to the St. Croix River watershed and look forward to working with the Passamaquoddy on this important matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stewart Fefer', written in a cursive style.

Stewart Fefer, Project Leader
Gulf of Maine Coastal Program

Enclosure: references cited

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